TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. EN998082

In Re Application Of: **Boice et al.**

Serial No.	Filing Date	Examiner	Group Art Unit
09/255,892	February 23, 1999	S. An	2713

Invention: **DYNAMICALLY SWITCHING QUANT MATRIX TABLES WITHIN AN MPEG-2 ENCODER**

TO THE ASSISTANT COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on **August 3, 2000**

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☐ A check in the amount of the fee is enclosed.

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A duplicate copy of this sheet is enclosed.

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Dated: **October 3, 2000**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND
INTERFERENCES

In re Application of: :
BOICE ET AL. : Group Art Unit: 2713
Serial No.: 09/255,892 : Examiner: An, S.
Filed: February 23, 1999 : Appeal No.:
For: DYNAMICALLY SWITCHING
QUANT MATRIX TABLES
WITHIN AN MPEG-2 ENCODER

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Board of Patent Appeals and Interferences, Assistant Commissioner for Patents, Washington, D.C. 20231, on October 03, 2000.

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Date of Signature: October 03, 2000

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To: Board of Patent Appeals and Interferences
Assistant Commissioner for Patents
Washington, D.C. 20231

Brief of Appellants

Sir:

This is an appeal from a final rejection dated May 5, 2000 rejecting claims 1-29, all the claims being considered in the

above-identified application. This Brief is accompanied by a check comprising payment of the requisite fee set forth in 37 C.F.R. §1.17(c).

Real Party in Interest

This application is assigned to **International Business Machines Corporation** by virtue of an Assignment executed on February 16 & 18, 1999 by the joint-inventors, and recorded with the United States Patent and Trademark Office at Reel 9793, Frame 0610 on February 23, 1999. Therefore, the real party in interest is **International Business Machines Corporation.**

Related Appeals and Interferences

To the knowledge of appellants, appellants' undersigned legal representative, and the assignee, there are no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the instant appeal.

Status of Claims

This patent application was filed on February 23, 1999 with the United States Patent and Trademark Office. As filed, the application contained twenty-nine (29) claims, of which three (3) were independent claims (i.e., claims 1, 18 & 29).

In an initial Office Action dated December 10, 1999, claims 1-3, 12, 18-20, and 25 were rejected under 35 U.S.C. §102(b) as

being anticipated by Sasaki et al. (U.S. Pat. No. 5,530,478); claim 29 was rejected under 35 U.S.C. §102(e) as being anticipated by Wheeler et al. (U.S. Pat. No. 5,825,680); claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Sasaki et al. in view of Wheeler et al.; claims 5-6, 9, and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sasaki et al.; claims 7-8, and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sasaki et al. in view of Riek et al. (U.S. Pat. No. 5,987,179); claims 10-11, and 23-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sasaki et al. in view of Katayama (U.S. Pat. No. 5,422,736) and Wheeler et al.; and claims 13-17, and 26-28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sasaki et al. in view of Hosono (U.S. Pat. No. 5,796,438). In Appellants' response mailed March 7, 2000, claims 1, 18 & 29 were amended.

In a telephonic interview conducted on April 27, 2000 between Examiner An, Examiner Lee, joint-inventor Boice, and joint-inventor Pokrinchak, it was agreed that the amended claim 1 overcame the previous claim 1 rejection under 35 U.S.C. §102(b) as being anticipated by Sasaki et al. It was further agreed that a new search was required.

In a final Office Action dated May 5, 2000, claim 29 was rejected under 35 U.S.C. §102(e) as being anticipated by Wheeler et al.; claims 1-4, 10-12, 18-20, and 23-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Katayama in view of Wheeler et al.; claims 5-6, 9, and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Katayama and Wheeler et al. as applied to claims 1 and 18, respectively, and further in

view of Sasaki et al.; claims 7-8, and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Katayama and Wheeler et al. as applied to claims 1 and 18, respectively, and further in view of Riek et al.; and claims 13-17, and 26-28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Katayama and Wheeler et al. as applied to claims 1 and 18, respectively, and further in view of Hosono. In Appellants' response mailed June 22, 2000, the new grounds for rejection were traversed and reconsideration thereof was requested.

In an Advisory Action dated July 10, 2000, Appellants' response was considered, however the examiner maintained the grounds of rejection.

A Notice of Appeal to the Board of Patent Appeals and Interferences was then filed on August 3, 2000. The status of the pending claims is therefore as follows:

Allowed claims - none
Claims objected to - none
Claims rejected - 1-29
Claims canceled - none.

Status of Amendments

No amendment was filed after issuance of the final Office Action dated May 5, 2000. The claims as set out in the Appendix include all prior entered amendments.

Summary of the Invention

The present invention recites a method, system and computer program product that allows for the encoding of a sequence of video data. The encode approach includes storage for holding multiple sets of quantization matrix tables (e.g., 263, 264 of FIG. 6). The sets of quantization matrix tables are separate and independent (e.g., 270, 280 of FIG. 7), and each set comprises at least one intra matrix table and at least one non-intra matrix table (see FIG. 7). As used herein, a "table" comprises multiple coefficients or entries, e.g., an 8x8 array of coefficients. A "set" of tables comprises two or more tables. Each set is recited to comprise at least one intra matrix table and at least one non-intra matrix table.

A quantizer (e.g., 250 of FIG. 6) quantizes the sequence of video data in a single pass using one set of the multiple sets of quantization matrix tables. Means (e.g., 261 of FIG. 6) are also provided for dynamically switching the quantizer from using the one set of quantization matrix tables to using another set of quantization matrix tables. See page 14, line 28 - page 17, line 7 of the specification.

Further, while one set of quantization matrix tables is being employed by the quantization unit, the encoder can be updating or modifying another set of quantization matrix tables, which after a few pictures can be switched to for use by the quantizer in quantizing the sequence of video data (see page 17, lines 8-33; claim 12). A quantization matrix table may comprise a default quantization matrix table pursuant to the MPEG standard, or may comprise a user's custom quantization matrix table (see FIG. 7; claims 6-9). Additionally, a set of

quantization matrix tables may comprise an intra luminance table, a non-intra luminance table, an intra chrominance table, and a non-intra chrominance table (see FIG. 7; claim 11).

Issues

Whether claim 29 was anticipated by Wheeler et al., and therefore, properly rejected under 35 U.S.C. §102; and whether claims 1-4, 10-12, 18-20, & 23-25 were obvious to one of ordinary skill in the art based on the teachings and suggestions of Katayama in view of Wheeler et al., and with respect to claims 5-6, 9 & 21, further in view of Sasaki et al., and with respect to claims 7-8, & 22, further in view of Riek et al., and with respect to claims 13-17, & 26-28, further in view of Hosono, and therefore, properly rejected under 35 U.S.C. §103.

Grouping of Claims

As to the rejections applied against claims 1-29, it is Appellants' intention that the rejected claims do not stand or fall together. For example, with respect to the 35 U.S.C. §§102(e) & 103(a) rejections of claims 1-29, Appellants respectfully submit that the following claim groups have separate basis for patentability:

I. Claim 29;

II. Claims 1-4, 10-12, 18-20, and 23-25;

III. Claims 5-6, 9 and 21;

IV. Claims 7-8 and 22; and

V. Claims 13-17 and 26-28

Argument

Group I: Claim 29

Independent claim 29 stands rejected as anticipated by Wheeler et al. This rejection is respectfully traversed and reconsideration thereof is requested.

Wheeler et al. describe a method and apparatus for performing fast division in accordance with certain bandwidth requirements particular to an implementation described therein. The final Office Action cites column 13, lines 18-32 of Wheeler et al. as relevant to the presently claimed invention. These lines describe a quantization unit 644 shown in FIG. 28. In the preferred embodiment, there are two quantization tables; i.e., one table is used when operating on intra-coded macroblocks, and the other table is used on non-intra-coded macroblocks. These quantization tables are stored in queue table RAMS 690. At column 13, lines 24-32, the patent states:

> ...In the preferred embodiment there are two quantization tables; one table is used when operating on intra-coded macroblocks, the other table is used on non-intra-coded macroblocks.
>
> As shown in FIG. 7, the quantization tables are stored in Q table RAMS 690. The CPU is responsible for loading all Q table entries. During encode and decode, the CPU loads the tables as required. Thus, the CPU is responsible for updating Q tables on video stream context switches.

Appellants respectfully submit that a careful reading of Wheeler et al. indicates that the patent is simply describing the MPEG standard which requires the use of an intra-coded matrix

table and a non-intra-coded matrix table, and therefore requires a switching from the intra table to the non-intra table during the encoding process. The above-noted lines of column 13 of Wheeler et al. clearly would be read by one skilled in the art as referring to this switching between intra and non-intra tables at a context switch, e.g., a scene change.

In support of the examiner's interpretation, the Response to Reconsideration mailed July 10, 2000 states that "the switching of the Q tables are necessary for multiple pipeline processing (Col. 15, lines 34-45 and 55-67; Col. 16, lines 1-7)." Appellants respectfully submit that Wheeler et al. are discussing a single pipeline with multiple stages in the cited text, and that this pipeline uses a single set of intra and non-intra matrix tables in its implementation. Regardless, multiple pipelines would also be capable of sharing a common set of matrix tables. Therefore, Wheeler et al. do not expressly teach the use of multiple, independent sets of tables as recited by Appellants in claim 29. Appellants respectfully submit that to read the sentences otherwise is a hindsight misinterpretation of the noted language.

Appellants' invention recited in claim 29 includes computer readable program code means for storing multiple sets of quantization matrix tables, wherein each set of quantization matrix tables comprises a separate, independent set of tables, and each set comprises at least one intra matrix table and at least one non-intra matrix table. The present invention assumes a normal "real time" switching of intra and non-intra tables such as described in Wheeler et al., but further adds the ability to dynamically switch from one complete set of intra and non-intra tables to another complete set of intra and non-intra tables in

real time, in a single pass without requiring stopping of the encoding process.

A careful reading of Wheeler et al. fails to uncover any discussion of switching between sets of tables. The patent expressly teaches in a preferred embodiment there are two quantization tables. One table is for operating on intra-coded macroblocks, and the other table is used for non-intra-coded macroblocks. Therefore, Wheeler et al. employ one "set" of quantization tables. In contrast, appellants recite switching between sets of tables, wherein one set comprises at least one intra matrix table and at least one non-intra matrix table. Thus, in appellants' approach, there are a minimum of four quantization tables between which the dynamic switching occurs.

Since there is no express teaching of this set switching concept in Wheeler et al., appellants respectfully request reconsideration and withdrawal of the anticipation rejection to claim 29 based thereon.

Group II: Claims 1-4, 10-12, 18-20 and 23-25

Independent claims 1 & 18 were rejected in the final Office Action based upon a combination of Katayama in view of Wheeler et al. This rejection is respectfully traversed and reconsideration is requested.

Katayama describes a technique for encoding image data which maintains the quality of the image. The patent notes that it has been conventional practice that coefficients obtained from discrete cosine transformation are quantized using a single quantization table. If, however, an identical quantization is

performed for images that are considerably dissimilar in their statistical characteristic, deterioration of image occurs especially at character portions where high frequency dominates.

In FIG. 8 of Katayama, three quantization tables are shown. One table holds chrominance coefficients, and two tables hold luminance coefficients, one for photographs 59, and the other for characters (i.e., letters) 58 within the photographs. As described at column 9, lines 24-44 of the patent, a character/photograph judging method is taught in which a block is considered a character region when an edge exists within that block, while it is considered a photograph region if no edge exists. (As used in the application, a block refers to a macroblock of data within a picture). Any system capable of character/photograph judgment may be used to make the determination of an edge. A switching signal is provided to a selector (56 or 57 in FIG. 8) which selects either a character-Y quantization table or a photograph-Y quantization table, or the chrominance table.

A careful reading of Katayama fails to uncover any teaching, suggestion or implication that a <u>set</u> of matrix tables are employed wherein the set <u>comprises</u> at least one intra matrix table and at least one non-intra matrix table. This is expressly recognized by the Examiner in the Office Action where it is stated that "Katayama does not particularly disclose Q matrix tables comprising at least one intra matrix table and at least one non-intra matrix table." Appellants agree.

Additionally, while Katayama discloses the use of multiple tables in encoding a still image, it fails to disclose the use of multiple sets of tables. In support of the Examiner's position,

the final Office Action cites Figure 8 of Katayama, particularly items 58,59,60. As can plainly be seen in the figure, each of these items represents a single table. No mention of multiple sets of tables can be found in the text of the patent. Therefore, appellants respectfully submit that Katayama fails to disclose the use of multiple sets of tables as stated in the final Office Action.

The final Office Action combines the teachings of Wheeler et al. to those of Katayama et al. to arrive at appellants' concept of switching between sets of matrix tables wherein each set comprises at least one intra matrix table and at least one non-intra matrix table. The combination of Wheeler et al. with Katayama is respectfully traversed.

Although not expressly stated, it is clear from a reading of Katayama that the patent is addressing encoding of still images. First, a careful reading of Katayama fails to uncover any discussion of motion estimation during the encode process, used to efficiently encode video. In addition, throughout the patent Katayama makes reference to facsimiles, still photos and a character/photograph judgment scheme. For example, column 1, lines 9-12 indicate that the field of the invention relates to image processing applicable to a color facsimile, color image file and the like. Column 4, lines 29-36 indicate that an image output device may be used such as a laser beam printer, an ink-jet printer or a display device. Obviously, motion video cannot be printed using a laser beam printer or an ink-jet printer, but a photo can be displayed on a display device. Column 5, lines 37-49 refer to quantization tables for Y data to be used for photographs, and for Y data to be used for characters. The patent consistently discusses switching between the photograph-Y-

data quantization table and the character-Y-data quantization table in accordance with a character/photograph judgment. The character/photograph judgment is also discussed at columns 8 & 9 of the patent. Based upon the above, appellants respectfully submit that Katayama is describing encoding of still photographs which may contain character information within the photograph.

In support of the Examiner's position, the Response to Reconsideration cites Column 4, line 1 which states that possible input devices include "a still video camera or a video camera." Appellants respectfully submit that a reading of the entire patent shows that the cited text is merely designed to provide examples of single image sources. Appellants read "a still video camera" as meaning a camera that takes photographs and is capable of showing the image in a video format. Appellants interpret "a video camera" as a video camera frozen at a particular image. A close reading of the entire patent fails to disclose any consideration of motion video images. Therefore, appellants respectfully submit that the cited sentence provides exemplary sources for single images and not sources for single images and motion video.

Encoding of still photographs is significantly different than encoding motion video. In a still photograph encode process, all pixel information is used, i.e., intra data on the photograph is used in order to detect edges of the characters. Thus, appellants respectfully submit that one skilled in the art would understand Katayama as using intra-coded tables for the chrominance and luminance tables referred to in the patent. In fact, non-intra-coded tables could not exist in a still photograph encode process such as described by Katayama. As understood by one skilled in the art, non-intra matrix tables

arise and are employed during motion estimation, i.e., for bi-directionally encoded frames of a video. Thus, appellants respectfully submit that Katayama inherently teaches away from the proposed combination with Wheeler et al., and appellants respectfully request reconsideration and withdrawal of the obviousness rejection to independent claims 1 & 18 based thereon.

Further, assuming arguendo that Katayama discloses a motion video camera at column 4, line 1, appellants respectfully submit that Katayama would teach away from the use of motion compensation. Specifically, even if Katayama describes a motion video camera, appellants respectfully submit that one skilled in the art would have read Katayama as teaching the use of I frame encoding only, i.e., pursant to JPEG standard, as necessary in order to implement the image processing described therein. Thus, if one skilled in the art would read Katayama as teaching use of a motion video camera, the patent clearly would also teach one skilled in the art to use I frame encoding (i.e., pursuant to JPEG standard), and not motion compensation as recited by appellants in independent claims 1 & 18 (i.e., each set of quantization matrix tables comprises at least one intra matrix table and at least one non-intra matrix table, wherein the non-intra matrix table is understood by one skilled in the art to be employed for motion compensation).

Notwithstanding the above, appellants respectfully submit that the Examiner's proposed combination of the teachings of Wheeler et al. with Katayama would still not produce the invention as claimed herein. As noted above, Wheeler et al. is describing switching between one intra table and one non-intra table during an encode process. In contrast, appellants' claimed invention recites switching between sets of tables, wherein one

set of tables is defined as comprising at least one intra table and at least one non-intra table. Thus, appellants are switching between two sets of tables wherein each set comprises at least two tables. Since both Katayama and Wheeler et al. fail to teach this concept, appellants respectfully submit that one skilled in the art would not have considered the claimed invention obvious in view thereof even if combined in some manner as suggested in the final Office Action and subsequent Response to Reconsideration.

To summarize, appellants respectfully submit that there is no suggestion in the prior art which would have led one skilled in the art to their claimed invention. The purported combination of Wheeler et al. with Katayama is clearly contrary to the entire purpose of Katayama, and even if the combination were made as proposed, the resultant encoder would still not comprise appellants' claimed invention.

The dependent claims are believed allowable for the same reasons as their respective independent claims, as well as for their own additional characterizations. For example, in claim 4 appellants recite that the means for dynamically switching further comprises a table set register wherein the quantizer is adapted to control the switching of the quantizer from one set of quantization matrix tables to another set of quantization matrix tables. The Office Action alleges that the MQUANT register 692 in Wheeler comprises a "table set register" with a function as recited by appellants in claim 4. This is respectfully traversed. The MQUANT register 692 is well known in the art for holding quantization step size. The register does not function or assist in switching between sets of matrix tables. Further, with respect to claim 12, a careful reading of Katayama and

Wheeler et al. fails to uncover any teaching or suggestion of the recited concept of dynamically changing quantization matrix tables of a presently unused set of quantization matrix tables of the multiple sets of tables, while still quantizing a sequence of video data using one set of tables or the other set of tables.

Groups III, IV & V: Claims 5-9, 13-17, 21, 22 & 26-28

Each of these dependent claims is believed allowable for the reasons discussed above in connection with the Group II claims.

Claims 5-9 recite various combinations wherein one or more tables of the sets of quantization matrix tables can comprise a default quantization matrix table pursuant to MPEG standard or a user's custom quantization matrix table. Claims 13-17 specify a compressed store interface which includes means for dynamically outputting a quantization matrix extension start code in the compress bit stream upon switching of the quantizer from one set of matrix tables to another set of matrix tables. Claims 21, 22 & 26-28 are similar to claims 6-9 & 13-17, respectively. Appellants respectfully submit that there is no suggestion or implication in the combined patents for such an encoder or encode process based upon the combined teachings of Katayama, Wheeler et al., Sasaki et al., Riek et al., and/or Hosono. The Sasaki et al., Riek et al. and Hosono patents do not overcome the above-noted deficiencies of Katayama and Wheeler et al. as applied against appellants' claims.

Conclusion

Appellants herein request reversal of the 35 U.S.C. §102 rejection of claim 29, and reversal of the 35 U.S.C. §103 rejections of claims 1-28 set forth in the final Office Action. Appellants respectfully submit that their claimed invention was not anticipated by Wheeler et al., nor obvious to one of ordinary skill in the art based upon Katayama, and Wheeler et al. in combination, either with or without Sasaki et al., Riek et al., and Hosono. In support of their position regarding the claims, Appellants note that no applied patent uses multiple sets of quantization matrix tables to encode video in real time. Katayama and Wheeler et al. merely disclose the use of multiple tables, which is assumed in the present invention. Based upon these recitations, Appellants allege error in rejecting their pending claims as anticipated or obvious based upon the applied art.

Accordingly, reversal of all rejections is respectfully requested.

Respectfully submitted,

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Appendix

1. An encoder for encoding a sequence of video data, said encoder comprising:

storage for holding multiple sets of quantization matrix tables, wherein said multiple sets of quantization matrix tables comprise separate, independent sets of quantization matrix tables, each set of quantization matrix tables comprising at least one intra matrix table and at least one non-intra matrix table;

a quantizer for quantizing said sequence of video data in a single pass using at least one set of quantization matrix tables of said multiple sets of quantization matrix tables; and

means for dynamically switching said quantizer during said single pass quantizing from using said one set of quantization matrix tables to using another set of quantization matrix tables of said multiple sets of quantization matrix tables.

2. The encoder of claim 1, wherein said means for dynamically switching comprises means for switching said quantizer from using said one set of quantizer matrix tables to using said another set of quantizer matrix tables at a picture boundary of said sequence of video data.

3. The encoder of claim 2, wherein said means for switching said quantizer at said picture boundary comprises means for switching from said one set of quantizer matrix tables to said another set of quantizer matrix tables without delaying encoding of said sequence of video data by said encoder.

4. The encoder of claim 3, wherein said means for dynamically switching further comprises a table set register within said quantizer adapted to control said switching of said quantizer from said one set of quantization matrix tables to said another set of quantization matrix tables.

5. The encoder of claim 1, wherein at least one table of said one set of quantization matrix tables comprises a default quantization matrix table pursuant to MPEG standard.

6. The encoder of claim 1, wherein multiple tables of said one set of quantization matrix tables comprise default quantization matrix tables pursuant to MPEG standard.

7. The encoder of claim 1, wherein at least one table of said another set of quantization matrix tables comprises a user's custom quantization matrix table.

8. The encoder of claim 1, wherein multiple tables of said another set of quantization matrix tables comprises a user's custom quantization matrix tables.

9. The encoder of claim 1, wherein each set of quantization matrix tables of said multiple sets of quantization matrix tables comprises at least one quantization matrix table, each quantization matrix table of said at least one quantization matrix table comprising one of a default quantization matrix table pursuant to MPEG standard or a user's custom quantization matrix table.

10. The encoder of claim 1, wherein each set of quantization matrix tables comprises an intra luminance table and a non-intra luminance table.

11. The encoder of claim 1, wherein each set of said multiple sets of quantization matrix tables comprises an intra luminance table, a non-intra luminance table, an intra chrominance table, and a non-intra chrominance table.

12. The encoder of claim 1, further comprising means for dynamically changing quantization matrix tables of a presently unused set of quantization matrix tables of said multiple sets of quantization matrix tables while quantizing said sequence of video data using said one set of quantization matrix tables or said another set of quantization matrix tables.

13. The encoder of claim 1, further comprising a compressed store interface for outputting a compressed bitstream produced by said encoder from said sequence of video data, said compressed store interface including means for dynamically outputting a quantization matrix extension start code in said compressed bitstream upon switching of said quantizer from using said one set of quantization matrix tables to using said another set of quantization matrix tables.

14. The encoder of claim 13, wherein said compressed store interface further comprises storage for also holding said multiple sets of quantization matrix tables.

15. The encoder of claim 13, wherein said means for dynamically outputting said quantization matrix extension start code comprises means for outputting said another set of quantization matrix tables in said compressed bitstream upon said quantizer switching from said one set of quantization matrix tables to said another set of quantization matrix tables.

16. The encoder of claim 13, wherein said means for dynamically outputting comprises means for outputting said quantization matrix extension start code in said compressed bitstream without pausing said encoding of said sequence of video data by said encoder.

17. The encoder of claim 13, further comprising means for changing quantization matrix tables in a presently unused set of said multiple sets of quantization matrix tables while said quantizer is quantizing said sequence of video data using said one set of quantization matrix tables or said another set of quantization matrix tables.

18. A method for encoding a sequence of video data, said method comprising:

providing storage for holding multiple sets of quantization matrix tables, wherein said multiple sets of quantization matrix tables comprise separate, independent sets of quantization matrix tables, each set of quantization matrix tables comprising at least one intra matrix table and at least one non-intra matrix table;

quantizing the sequence of video data in a single pass using at least one set of quantization matrix tables of said multiple sets of quantization matrix tables; and

dynamically switching said quantizing during said single pass from using said one set of quantization matrix tables to using another set of quantization matrix tables of said multiple sets of quantization matrix tables.

19. The method of claim 18, wherein said dynamically switching comprises switching said quantizing from using said one set of quantizer matrix tables to using said another set of quantizer matrix tables at a picture boundary of said sequence of video data.

20. The method of claim 19, wherein said switching of said quantizing at said picture boundary comprises switching from said one set of quantizer matrix tables to said another set of quantizer matrix tables without delaying encoding of said sequence of video data.

21. The method of claim 18, wherein at least one table of said one set of quantization matrix tables comprises a default quantization matrix table pursuant to MPEG standard or a user's custom quantization matrix table.

22. The method of claim 18, wherein at least one table of said another set of quantization matrix tables comprises a default quantization matrix table pursuant to MPEG standard or a user's custom quantization matrix table.

23. The method of claim 18, wherein each set of said multiple sets of quantization matrix tables comprises an intra luminance table and a non-intra luminance table.

24. The method of claim 18, wherein each set of said multiple sets of quantization matrix tables comprises an intra luminance table, a non-intra luminance table, an intra chrominance table, and a non-intra chrominance table.

25. The method of claim 18, further comprising dynamically changing quantization matrix tables of a presently unused set of quantization matrix tables of said multiple sets of quantization matrix tables while quantizing said sequence of video data using said one set of quantization matrix tables or said another set of quantization matrix tables.

26. The method of claim 18, further comprising producing a compressed bitstream employing a compressed store interface, said producing comprising dynamically outputting a quantization matrix extension start code in said compressed bitstream upon said switching from said one set of quantization matrix tables to said another set of quantization matrix tables.

27. The method of claim 26, wherein said dynamically outputting comprises outputting said quantization matrix extension start code in said compressed bitstream without pausing said encoding of said sequence of video data.

28. The method of claim 26, further comprising changing quantization matrix tables in a presently unused set of said multiple sets of quantization matrix tables while quantizing said sequence of video data using said one set of quantization matrix tables or said another set of quantization matrix tables.

29. An article of manufacture comprising:

a computer program product comprising computer usable medium having computer readable program code means therein for use in encoding a sequence of video data, said computer readable program code means in said computer program product comprising:

computer readable program code means for causing a computer to effect storing multiple sets of quantization matrix tables, wherein said multiple sets of quantization matrix tables comprise separate, independent sets of quantization matrix tables, each set of quantization matrix tables comprising at least one intra matrix table and at least one non-intra matrix table;

computer readable program code means for causing a computer to effect quantizing the sequence of video data in a single pass using at least one set of quantization matrix tables of said multiple sets of quantization matrix tables; and

computer readable program code means for causing a computer to effect dynamically switching said quantizing during said single pass from using said one set of quantization matrix tables to using another set of quantization matrix tables of said multiple sets of quantization matrix tables.